



**DIET**  
PALAKKAD - ANAYKKA



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QUALITY EDUCATION FOR ALL



**Inter Bell**  
Intervention Based on Effective Leisure Learning  
DIET PALAKKAD

A JOINT VENTURE OF DIET AND SSK, PALAKKAD

**6 Unravelling Genetic Mysteries**  
ജാതപിരിയുന്ന  
ഔന്നിതകരഹസ്യങ്ങൾ



**10th Biology**  
**Chapter\_06**  
**Worksheet based on**  
**Focus Area**

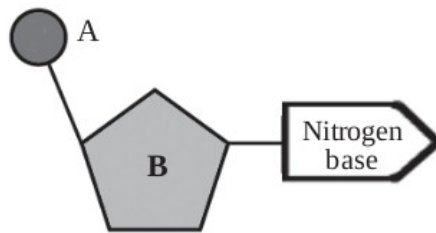
1.

Find the word pair relationship and fill in the blanks appropriately.

- a) DNA : Thymine  
RNA : .....
- b) Adenine : Thymine  
Guanine : .....

2.

Analyse the illustration of a nucleotide molecule and answer the questions.



- (a) Identify A and B in the illustration.
- (b) "Nucleotides are found in DNA alone". What is your opinion regarding this statement? Substantiate.

3.

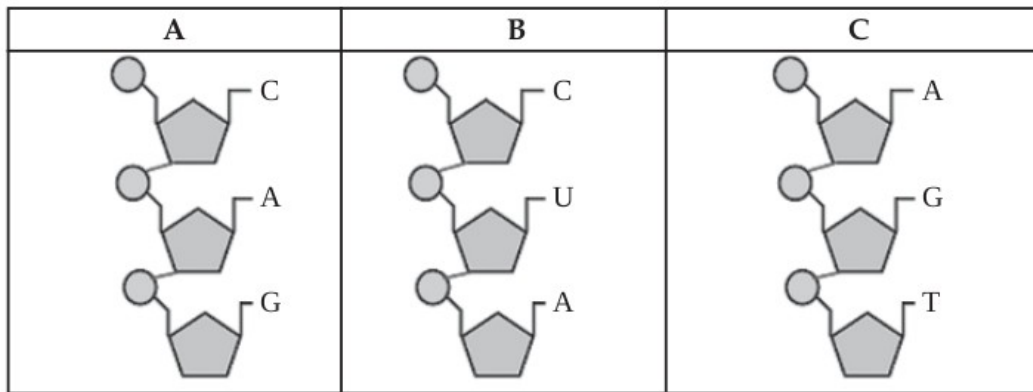
The components and features of nucleic acid are given below. Analyse them and complete the table.

- a) ribose sugar
- b) double helical shape
- c) uracil
- d) one strand
- e) deoxyribose sugar
- f) thymine

DNA	RNA
•	•
•	•
•	•

4.

Observe the nucleotide strands given below and answer the questions.



- Identify the strand that is found in DNA only.
- Identify the strand that can be found in both DNA and RNA.
- What is a nucleotide?

5.

The practice of blaming those mothers who give birth to girl children exists even today.

- As a science student, how will you respond to this situation? Substantiate.

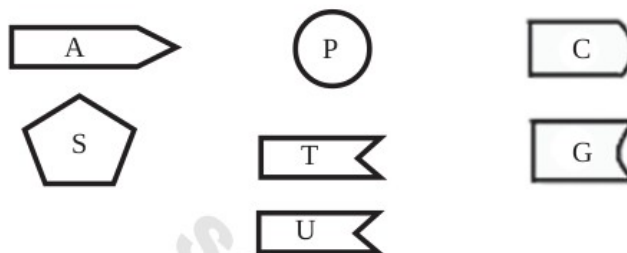
6.

The chromosomes from the father determine whether the child is male or female.

Evaluate this statement on a scientific basis.

7.

The components of nucleic acids are given below. Answer the questions through illustrations using these components:



- Illustrate the nucleotide which is found only in RNA.
- Illustrate the nucleotide which is found only in DNA.

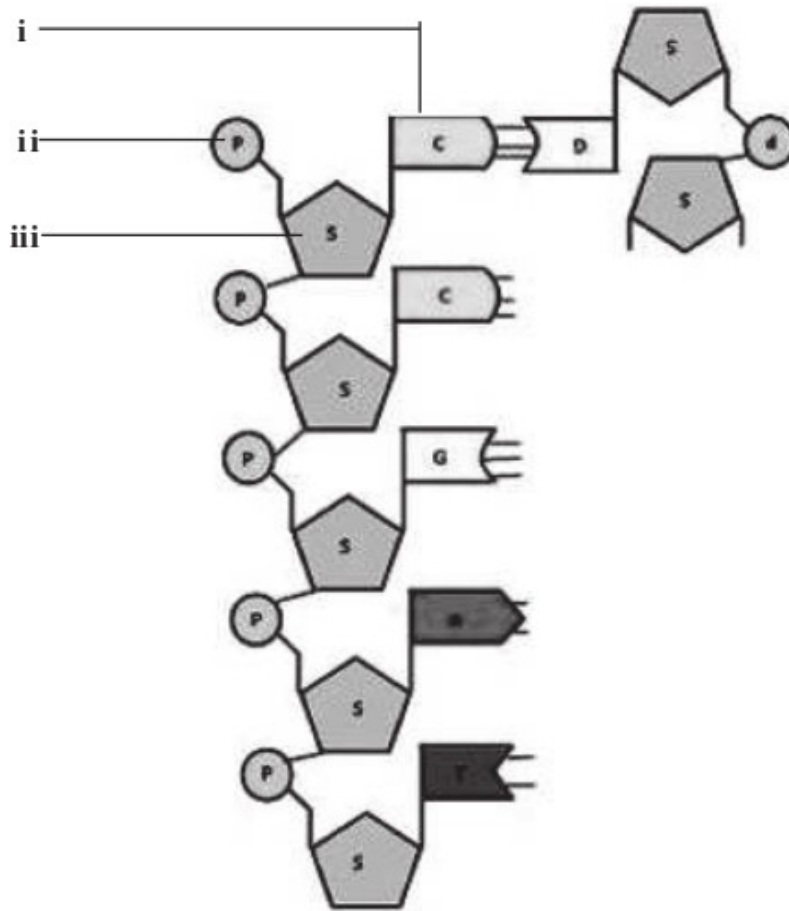
8.

Analyse the nitrogen bases given below and write the nitrogen base pairs found in DNA.

Thymine      Guanine      Uracil      Adenine      Cytosine

9.

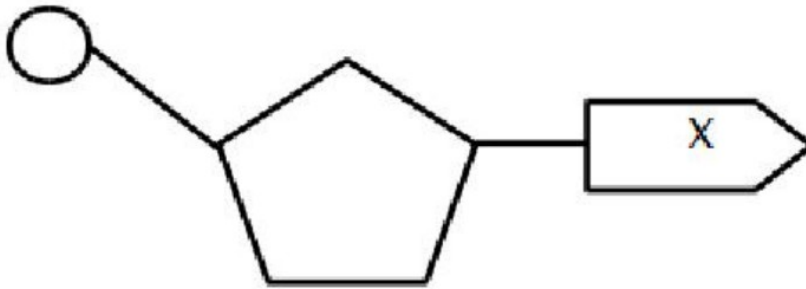
A. The sequential arrangements of nucleotides in DNA molecule is illustrated below. Complete the illustration by drawing the second strand of the DNA molecule.



B. Tabulate the differences between DNA and RNA

	<b>DNA</b>	<b>RNA</b>
Number of strands	.....	.....
Type of sugar	.....	.....
Nitrogen bases	.....	.....
	.....	.....
	.....	.....
	.....	.....

Observe the illustration and answer the questions.



- Identify the illustration?
- What are the components of this molecule?
- Name the different types of the molecule which indicates "X" in DNA?

**11.**

Make suitable pairs using the given nitrogen bases.

Adenine, thymine, guanine, cytosine

**12.**

According to the double helical model of DNA molecule, choose the correct statements from the following.

- The DNA molecule contains nitrogen bases.
- Three types of nitrogen bases are found in the DNA.
- All the nitrogen bases found in DNA are also found in RNA.
- The rungs of DNA are made of nitrogen bases.

**13.**

Find out the odd one? Write the common feature of others.

Adenine, thymine, uracil, cytosine

**14.**

Find the correct statements from the following.

- Thymine Nitrogen base is not found in RNA.
- Uracil nitrogen base is found in DNA.
- Guanine Nitrogen base is found in DNA.

- A and B are correct
- B and C are correct
- A and C are correct
- C is correct

**15.**

Complete the table.

Nucleic acid	Number of threads	The type of sugar	Nitrogen bases found
A.....	2	B.....	Adenine, Cytosine, Guanine, C) .....
RNA	D.....	E.....	Adenine, Cytosine, Guanine, F) .....

16.

Observe the picture given below and answer the questions.



- What does the picture indicate?
- Which are the components of its long strands?
- What are the components of rungs?

17.

Correct mistakes if any in the underlined part.

- Thiamine is a nitroge base not found in DNA
- Adenine is a nitrogen base found in RNA
- rRNA is a part of the ribosome
- The amino acids are carried to the ribosome by mRNA.

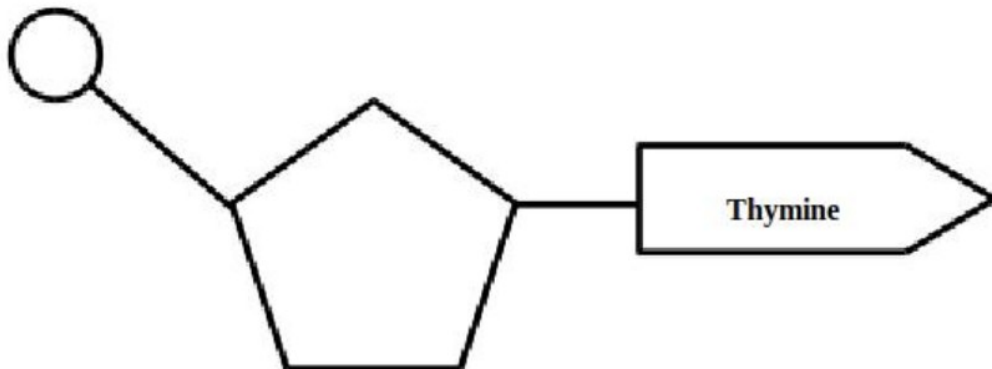
18.

"There is nothing scientific in blaming mothers who only give birth to female child"

Do you agree with this statement?Why?

19.

Which of the following is a nitrogen base complementary to the nitrogen base given in the illustration?



- a) Uracil b) Cytosine c) guanine d) adenine

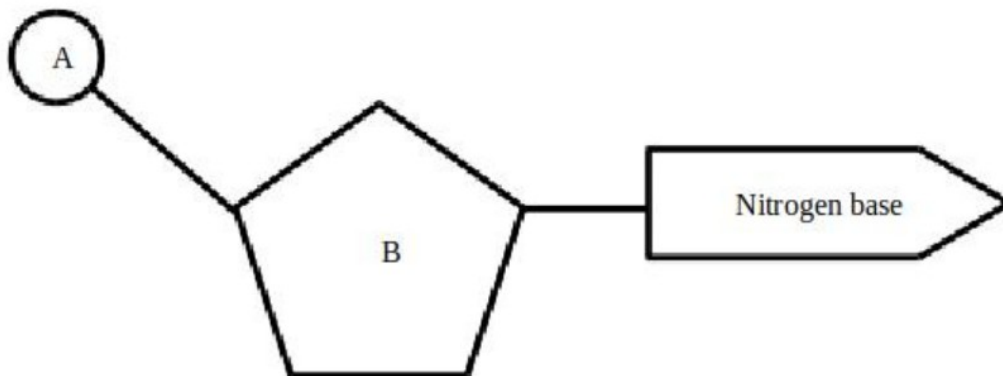
20.

From the given chromosome makeup, find out the genetic makeup of males and females respectively.

- a) 22+XY, 22+ XX  
 b) 22+X, 22+XX  
 c) 44+XY, 44+XX  
 d) 44+XX, 44+XY

21.

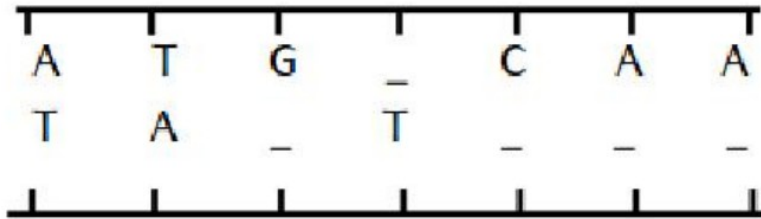
Observe the illustration.



- a) Identify the illustration?  
 b) Identify the molecules A and B in the illustration?  
 c) Which are the nitrogen bases present in DNA molecule?

22.

Complete the illustration of DNA.



23.

Write down the steps of protein synthesis in correct sequences.